

IN THE CLAIMS:

Please cancel claims 2 - 6, 10 - 12, 14 - 19 and 22 without prejudice.

Please substitute the following claims for the pending claims with the same number:

1. (currently amended) A method for simulating an appearance of products on an image of a consumer, ~~comprising~~comprising:

compiling a database of a plurality of products, said database including appearance information for each said ~~product~~product;

acquiring a base image of a consumer, said base image including a plurality of ~~pixels~~pixels;

identifying a product application area in said base image, said product application area including a blending region, said product application area and said blending region thereof being defined by sets of pixels of said base ~~image~~image;

receiving a product selection from said ~~consumer~~consumer;

retrieving appearance information associated with said selected product from said ~~database~~database;

modifying appearance information of said base image pixels of said product application area according to said appearance information of said selected ~~product~~product, thereby generating a modified image, comprising:

assigning hue and saturation appearance values of pixels of said product application area equal to hue and saturation appearance values of said selected product, respectively; and

assigning intensity appearance values of pixels of said product application area according to intensity appearance values of a plurality of base image pixels within said product application area and according to intensity appearance values of a plurality of base image pixels outside said product application area, employing the following function,

$$I_{out} = A * I_{in} + B,$$

where:

I<sub>out</sub> is the value of the intensity of a pixel of the modified image;

I<sub>out</sub> can range between upper and lower limits of 255 and 0, respectively;

I<sub>in</sub> is the value of the intensity of an associated pixel of the base image;

I<sub>in</sub> can range between the upper and lower limits;

A is the slope of the function and is computed according to a Gaussian distribution function, as follows,

$$A = \exp(-0.5 * (I_{color} - I_{mean})^2 / I_{stdev}^2),$$

where:

I<sub>color</sub> is the value of the intensity of the selected product appearance information;

I<sub>mean</sub> is a mean value of the intensities of the pixels in the product application area; and

I<sub>stdev</sub> is a standard deviation of the intensities of the pixels in the product application area; and

B is a constant computed by equating the I<sub>in</sub> and I<sub>out</sub> values to I<sub>mean</sub> and I<sub>color</sub>, respectively;

blending said ~~blending region~~ modified image with said base image by ~~modifying~~ assigning appearance information of said pixels of said blending region according to appearance information of pixels of said selected product modified image and according to appearance information of associated pixels of said base image ~~in said blending region~~, thereby generating a composite image;

displaying ~~at~~ the composite image of said ~~base image as modified and blended in said application area and said blending region~~; and

providing means to display an alternative product within said product application area.

2. (canceled)

3. (canceled)

4. (canceled)

5. (canceled)

6. (canceled)

7. (currently amended) A method for simulating an appearance of products on an image of a consumer, ~~as in claim 5, wherein: said step of assigning intensity appearance values of said pixels of said product application area further comprises comprising:~~

compiling a database of a plurality of products, said database including appearance information for each said product;

acquiring a base image of a consumer, said base image including a plurality of pixels;

identifying a product application area in said base image, said product application area including a blending region, said product application area and said blending region thereof being defined by sets of pixels of said base image;

receiving a product selection from said consumer;

retrieving appearance information associated with said selected product from said database;

modifying appearance information of base image pixels of said product application area according to said appearance information of said selected product, thereby generating a modified image, comprising:

assigning hue and saturation appearance values of pixels of said product application area equal to hue and saturation appearance values of said selected product; and

assigning intensity appearance values of said pixels of said product application area according to intensity appearance values of substantially all of said base image pixels in said base image pixels;

blending said modified image with said base image by assigning appearance information of pixels of said blending region according to appearance information of pixels of said modified image and according to appearance information of associated pixels of said base image, thereby generating a composite image;

displaying the composite image; and

providing means to display an alternative product within said product application area.

8. (currently amended) A method for simulating an appearance of products on an image of a consumer, as in claim 7, wherein[[:]] said step of assigning intensity

appearance values of said pixels of said product application area further comprises employing the following ~~formula~~function,

$$I_{out} = A * I_{in} + [[B]]B,$$

~~Where;~~where:

$I_{out}$  is the value of the intensity of a pixel of the ~~equalized area;~~modified image;

$I_{out}$  can range between ~~Upper~~upper and ~~Lower~~lower ~~Limits~~limits of 255 and 0, ~~respectively;~~respectively;

$I_{in}$  is the value of the intensity of an associated pixel ~~of the product application area of the base image (before equalization);~~image;

$I_{in}$  can range between the ~~Upper~~upper and ~~Lower~~lower ~~Limits;~~limits;

A is the slope of the function and is computed according to a ~~gaussian~~Gaussian distribution function, as ~~follows;~~follows,

$$A = \exp(-0.5 * (I_{color} - I_{mean})^2 / I_{stdev}^2 [[D]])L,$$

~~Where;~~where:

$I_{color}$  is the value of the intensity of the ~~applied~~selected product ~~color;~~appearance information;

$I_{mean}$  is ~~the~~a mean value of the intensities of the ~~base image~~pixels in the product application area; and

$I_{stdev}$  is ~~the variance~~a standard deviation of the intensities of the ~~base image~~pixels in the product application area; and

B is a constant computed by equating the  $I_{in}$  and  $I_{out}$  values ~~in the equalization function to~~ $I_{mean}$  and  $I_{color}$ , respectively.

9. (currently amended) A method for simulating an appearance of products on an image of a consumer, ~~comprising~~comprising:

compiling a database of a plurality of products, said database including appearance information for each said ~~product~~product;

acquiring a base image of a consumer, said base image including a plurality of ~~pixels~~pixels;

identifying a product application area in said base image, said product application area including a blending region, said product application

area and said blending region thereof being defined by sets of pixels of said base ~~image~~image;

assigning alpha channel values to each pixel of said set of pixels of said product application ~~area~~area;

receiving a product selection from said ~~consumer~~consumer;

retrieving appearance information associated with said selected product from said ~~database~~database;

modifying appearance information of base image pixels of said product application area according to said appearance information of said selected product, thereby generating a modified image, comprising

assigning hue and saturation appearance values of ~~said~~ pixels of said product application area substantially equal to hue and saturation appearance values of said selected ~~product~~product;

assigning intensity appearance values of ~~said~~ pixels of said product application area according to intensity appearance values of a plurality of base image pixels within said product application area ~~in said base image~~ and according to intensity appearance values of substantially all of said base image ~~pixels of said base image~~pixels;

said intensity appearance values are assigned according to a predetermined algorithm, comprising employing the following ~~formula~~function,

$$I_{out} = A * I_{in} + [[B]]\underline{B},$$

~~Where~~where:

$I_{out}$  is the value of the intensity of a pixel of the ~~equalized area~~modified image;

$I_{out}$  can range between ~~Upper~~upper and ~~Lower~~lower ~~Limits~~limits of 255 and 0, ~~respectively~~respectively;

$I_{in}$  is the value of the intensity of an associated pixel ~~of the product application area of the base image (before equalization)~~image;

$I_{in}$  can range between the ~~Upper~~upper and ~~Lower~~lower ~~Limits~~limits;

A is the slope of the function and is computed according to a ~~gaussian~~Gaussian distribution function, as ~~follows~~follows,

$$A = \exp(-0.5 * (I_{\text{color}} - I_{\text{mean}})^2 / I_{\text{stdev}}^2) / ([I])$$

~~Where, where:~~

~~$I_{\text{color}}$  is the value of the intensity of the appliedselected product ~~color, appearance~~ information;~~

~~$I_{\text{mean}}$  is a mean value of the intensities of the base image pixels in the product application ~~area, area;~~ and~~

~~$I_{\text{stdev}}$  is ~~the variance~~ a standard deviation of the intensities of the base image pixels in the product application ~~area, area;~~ and~~

~~B is a constant computed by equating the  $I_{\text{in}}$  and  $I_{\text{out}}$  values in the equalization function to  $I_{\text{mean}}$  and  $I_{\text{color}}$ , respectively, respectively;~~

~~blending pixels in said product application area modified image of said product application area with said base image by modifying assigning appearance information of said pixels of said blending region according to said alpha ~~values~~ values, thereby generating a composite image, wherein:~~

~~a red color value ( $R_c$ ), a green color value ( $G_c$ ) and a blue color value ( $B_c$ ) of said pixels of said product application area in said composite image being determined by the following ~~formula;~~ respective formulae,~~

$$R_c = [R_b * \text{Alpha} + R_p * (\text{Alpha} - \text{UpperLimit})] / \text{UpperLimit}$$

$$G_c = [G_b * \text{Alpha} + G_p * (\text{UpperLimit} - \text{Alpha})] / \text{UpperLimit},$$

$$B_c = [B_b * \text{Alpha} + B_p * (\text{UpperLimit} - \text{Alpha})] / \text{UpperLimit}, \text{ and}$$

$$B_c = [B_b * \text{Alpha} + B_p * (\text{UpperLimit} - \text{Alpha})] / \text{UpperLimit},$$

~~where~~where:

~~$R_b$ ,  $G_b$  and  $B_b$  are respective ~~is a~~ red, green and blue color ~~value~~ values of an ~~associated~~ pixel in said base image;~~

~~$R_p$ ,  $G_p$  and  $B_p$  are respective ~~is a~~ red, green and blue color ~~value~~ values of an associated pixel in said selected product modified image;~~

~~Alpha is an Alpha value of an associated pixel in said product application area; and~~

~~UpperLimit is a predefined upper limit of said Alpha values~~

~~a green color value (Ge) of said pixels of said product application area in said composite image being determined by the following formula:~~

$$G_e = [G_b * \text{Alpha} + G_p * (\text{Alpha} - \text{UpperLimit})] / \text{UpperLimit}$$

where

~~G<sub>b</sub> is a green color value of an associated pixel in said base image~~

~~G<sub>p</sub> is a green color value of said selected product;~~

~~Alpha is an Alpha value of an associated pixel in said product application area; and~~

~~UpperLimit is a predefined upper limit of said Alpha values~~

~~a blue color value (Be) of said pixels of said product application area in said composite image being determined by the following formula:~~

$$B_e = [B_b * \text{Alpha} + B_p * (\text{Alpha} - \text{UpperLimit})] / \text{UpperLimit}$$

where,

~~B<sub>b</sub> is a blue color value of an associated pixel in said base image~~

~~B<sub>p</sub> is a blue color value of said selected product;~~

~~Alpha is an Alpha value of an associated pixel in said product application area; and~~

~~UpperLimit is a predefined upper limit of said Alpha values;~~

~~displaying the composite image of said base image as modified and blended in said product application area and said blending region thereof; and~~

~~providing means to display an alternative product within said product application area.~~

10. (canceled)

11. (canceled)

12. (canceled)

13. (currently amended) A method of marketing aesthetic products, comprising:

compiling a database of a plurality of aesthetic products, said database including appearance information for each said aesthetic ~~product~~product;

acquiring a base image of a consumer, said base image including a plurality of ~~pixels~~pixels;

identifying a product application area in said base image, said product application area including a blending region, said product application area and said blending region thereof being defined by sets of pixels of said base ~~image~~image;

selecting a product selection from said ~~database~~database;

retrieving appearance information associated with said selected product from said ~~database~~database;

modifying appearance information of said ~~base image~~ pixels of said product application area according to said appearance information of said selected ~~product~~product, thereby generating a modified image, comprising:

assigning hue and saturation appearance values of pixels of said product application area equal to hue and saturation appearance values of said selected product; and

assigning intensity appearance values of pixels of said product application area according to intensity appearance values of a plurality of base image pixels within said product application area and according to intensity appearance values of a plurality of base image pixels outside said product application area, employing the following function,

$$I_{out} = A * I_{in} + [[B]]B ,$$

where:

$I_{out}$  is the value of the intensity of a pixel of the modified image;

$I_{out}$  can range between ~~Upper~~upper and ~~Lower~~lower ~~Limits~~limits of 255 and 0, respectively;

$I_{in}$  is the value of the intensity of an associated pixel of the base image;

$I_{in}$  can range between the upper and lower limits;



A is the slope of the function and is computed according to a Gaussian distribution function, as follows,

$$A = \exp(-0.5 * (I_{\text{color}} - I_{\text{mean}})^2 / I_{\text{stdev}}^2),$$

where:

I<sub>color</sub> is the value of the intensity of the selected product appearance information;

I<sub>mean</sub> is a mean value of the intensities of the base image pixels in the product application area; and

I<sub>stdev</sub> is a standard deviation of the intensities of the base image pixels in the product application area; and

B is a constant computed by equating the I<sub>in</sub> and I<sub>out</sub> values to I<sub>mean</sub> and I<sub>color</sub>, respectively;

blending said product application area modified image with said base image by ~~modifying~~ assigning appearance information of said pixels of said blending region according to appearance information of pixels of said selected product modified image and according to appearance information of associated pixels of said base image in said blending region, thereby generating a composite image; and

distributing, to said consumer, the composite image of said base image as modified and blended in said product application area and said blending region thereof.

14. (canceled)

15. (canceled)

16. (canceled)

17. (canceled)

18. (canceled)

19. (canceled)

20. (currently amended) A method of marketing aesthetic products, ~~as in claim 18,~~  
~~wherein: said step of assigning intensity appearance values of said pixels of said~~  
~~product application area further comprises comprising:~~

compiling a database of a plurality of aesthetic products, said  
database including appearance information for each said aesthetic product;

acquiring a base image of a consumer, said base image including  
a plurality of pixels;

identifying a product application area in said base image, said  
product application area including a blending region, said product application  
area and said blending region thereof being defined by sets of pixels of said base  
image;

selecting a product selection from said database;

retrieving appearance information associated with said selected  
product from said database;

modifying appearance information of base image pixels of said  
product application area according to said appearance information of said selected  
product, thereby generating a modified image, comprising:

assigning hue and saturation appearance values of  
pixels of said product application area equal to hue and saturation appearance  
values of said selected product; and

assigning intensity appearance values of said  
pixels of said product application area according to intensity appearance values of  
substantially all of said base image pixels in said base image pixels;

blending said modified image with said base image by assigning  
appearance information of pixels of said blending region according to appearance  
information of pixels of said modified image and according to appearance  
information of associated pixels of said base image, thereby generating a  
composite image; and

distributing, to said consumer, the composite image.

21. (currently amended) A method of marketing aesthetic products, as in claim 20,  
wherein[[[:]]] said step of assigning intensity appearance values of said pixels of  
said product application area further comprises employing the following formula:

$$I_{out} = A * I_{in} + [[B]]B_{\text{.}}$$

~~Where;~~where:

$I_{out}$  is the value of the intensity of a pixel of the ~~equalized~~  
~~area,modified image;~~

$I_{out}$  can range between ~~Upperupper~~ and ~~Lowerlower Limitslimits~~  
of 255 and 0, ~~respectively, respectively;~~

$I_{in}$  is the value of the intensity of an associated pixel ~~of the~~  
~~product application area of the base image (before equalization);image;~~

$I_{in}$  can range between the ~~Upperupper~~ and ~~Lowerlower~~  
~~Limitslimits;~~

A is the slope of the function and is computed according to a  
~~gaussian~~Gaussian distribution function, as ~~follows:follows,~~

$$A = \exp(-0.5 * (I_{color} - I_{mean})^2 / I_{stdev}^2 [D])L,$$

~~Where,where:~~

$I_{color}$  is the value of the intensity of the  
~~appliedselected~~ product ~~color,appearance information;~~

$I_{mean}$  is a mean value of the intensities of the base  
image pixels in the product application ~~area,area;~~ and

$I_{stdev}$  is ~~the variance~~ a standard deviation of the  
intensities of the base image pixels in the product application ~~area,area;~~ and

B is a constant computed by equating the  $I_{in}$  and  $I_{out}$  values ~~in the~~  
~~equalization function to~~  $I_{mean}$  and  $I_{color}$ , respectively.

22. (canceled)